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Plastic Film Extruder

This device is used to prove film-forming capabilities for any plastic. As crude oil prices continue to rise, bioplastics will be in greater demand. Polylactic acid (PLA) is one example of a bioplastic. We have shown that PLA can be generated from waste potatoes and wood-derived sugars. Other sources of bioplastic may be investigated, and this equipment can be used to test film characteristics of those bioplastics.

Beads of plastic are added to the hopper, then augured into the heating zone. Here, the beads are softened by heat and then forced through dies. The film from the dies is cooled on a chiller roll, then pressed and wound on a take-up roll for testing. For those familiar with a paper machine, matching speeds for the several sections is important. Unlike a paper web, the plastic film can be stretched more without breaking the web. Thickness of the film can be adjusted somewhat by this stretching and pressing.

This equipment, purchased with funds from a National Science Foundation grant, was moved from Jenness Hall to TRC.

The Environmental Health Strategy Center has collaborated with FBRI in developing PLA from potatoes and wood extracts.

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